

DART AEROSPACE LTD	Work Order:	23039
Description: Ø2.750 Support	Part Number:	D2893-1
Dwg: D2893 Rev. A1	Qty:	20
		Page 1 of 1

Step	Location	Procedure	By	Date	Qty
1	DC	Issue Traveller. Blank size makes (2) D2893-1 Dwg not required	KJ	05.04.13	10
2	PG	Issue P/O: <u>2007884</u> D6104-005 Description: D6104-005 B22834 / B23039 Material: 17-4 PH SS (AMS 5643 OR AISI 630) as per Dwg D6104 Material release note required.	W	05.04.13	10
3	RG	Receive and Inspect for raw material dimensions. Ensure material release note is attached.	CL	05/04/21	10
4	MS	Turn blank for Haas as per Folio FA081	JG/ml	05/05/16	10
5	QC1	Inspect all dimensions as per Dwg D2893	JG	05/05/17	10
6	MV	Machine as per Folio FA081	CP/E	05/05/21	20 PTO
7	MV	Tumble & Deburr	CP/E	05/05/21	20
8	QC1	Inspect all dimensions to inspection sheet as per Dwg D2893	CP/E	05/05/21	20
9	QC8	Inspect dimensions for second check	ml	05/05/24	20
10	FP	Powder Coat White (4.3.5.2) per QSI 005 4.3	ml	05 05 31	20
11	QC3	Inspect Powder Coat	ml	05-06-01	20
12	ST	Identify and stock	ml	05-06-01	20
13	AC	Cost / part <u>117.50</u>	JG	05-06-03	20
14	DC	Close W/O / 3 8.35 Inspect Level 21	KJ	05.06.09	20

Rev	Date	Change	Revised By	Approved
A	01.01.08	Preliminary Issue	EC	
B	01.07.19	Heat treat removed	NG	
C	02.11.26	Reformat; Added P/O	KJ	

RELEASED
02.11.29 RF

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR: 23039		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			
05/05/19	#6	one Part scrap - Part was put the wrong way (upside down) in fixture.	18 rev 05/02	Scrap + give to eng.	EP 05/05/19	18 05-05-19	18 messen	18 05-05-19

Part No: D2893-1 PAR #: _____ Fault Category: Production / machine NCR: Yes No DQA: 19 Date: 05/06/09
 NOTE: Date & initial all entries QA: N/C Closed: 19 Date: 05.06.09

DART AEROSPACE LTD		Work Order:	23039
Description: Ø2.750 Support		Part Number:	D2893-1
Inspection Dwg: D2893 Rev. A1		Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2893 Rev A1/DSK078 Rev A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
Lathe Section									
A	2.707	2.712		2.712	2.712	2.709	2.710		
B	4.946	4.966		4.954	4.954	4.953	4.954		
C	3.064	3.084		3.072	3.073	3.072	3.072		
D	0.718	0.738		0.728	0.729	0.728	0.728		
E	0.090	0.110		0.101	0.102	0.101	0.100		
F	2.934	2.954		2.944	2.944	2.944	2.944		
G	2.166	2.186		2.180	2.180	2.174	2.176		
H	3.890	3.910		3.899	3.899	3.899	3.899		
I	0.914	0.934		0.924	0.924	0.924	0.925		
J	0.022	0.042		0.032	0.032	0.032	0.032		
K	0.109	0.129			0.118	0.118	0.115		
L									
HAAS Section									
AA	2.985	3.005		3.005	3.002	3.002	3.002		
AB	0.440	0.460		0.450	0.450	0.450	0.450		
AC	0.125	0.160		0.143	0.151	0.148	0.148		
AD	0.040	0.060		0.042	0.042	0.042	0.042		
AE	0.188	0.193	DT8706	0.188	0.188	✓	✓		
AF	0.125	0.160		0.151	0.151	0.150	0.150		
AG	0.140	0.160		0.151	0.152	0.152	0.152		
sp AH	1.360	1.400		1.390	1.390	1.390	1.390		
sp AI	0.040	0.060		0.047	0.048	0.050	0.050		
sp AJ	1.190	1.230		1.190	1.190	1.190	1.190		
AK	0.010	0.020		0.010	0.010	0.010	0.010		
AL	0.053	0.073		0.063	0.063	0.063	0.063		
AM	0.240	0.260		0.250	0.250	0.250	0.250		
sp AN	2.518	2.538		2.518	2.518	2.519	2.519		
AO	84.39	90.39	DT8699	✓	✓	✓	✓		
AP	0.257	0.262	DT8683	0.258	✓	✓	✓		
AQ	0.053	0.073		0.063	0.063	0.063	0.062		
AR									
AS									
Accept/Reject									

Measured by:	SP/EC
Date:	05.05.18

Audited by:	EP
Date:	05/05/18

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	RE

RELEASED
03.07.01

23039

DART AEROSPACE LTD	Work Order: 22832
Description: Ø2.750 Support	Part Number: D2893-1
Inspection Dwg: D2893 Rev. A1	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2893 Rev A1/DSK078 Rev A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				1	2	3	4		
Lathe Section									
A	2.707	2.712		2.712	2.711	2.712	2.710		
B	4.946	4.966		4.950	4.952	4.953	4.952		
C	3.064	3.084		3.073	3.072	3.074	3.074		
D	0.718	0.738		0.729	0.730	0.728	0.728		
E	0.090	0.110		0.099	0.098	0.100	0.098		
F	2.934	2.954		2.944	2.945	2.944	2.945		
G	2.166	2.186		2.177	2.176	2.176	2.176		
H	3.890	3.910		3.899	3.900	3.898	3.899		
I	0.914	0.934		0.924	0.930	0.929	0.928		
J	0.022	0.042		0.032	0.032	0.032	0.032		
K	0.109	0.129		0.117	0.116	0.117	0.116		
L									
HAAS Section									
AA	2.985	3.005		3.002	3.002	3.003	3.003		
AB	0.440	0.460		0.450	0.450	0.450	0.450		
AC	0.125	0.160		0.148	0.148	0.148	0.148		
AD	0.040	0.060		0.050	0.050	0.050	0.050		
AE	0.188	0.193	DT8706	✓	✓	✓	✓		
AF	0.125	0.160		0.140	0.140	0.139	0.138		
AG	0.140	0.160		0.148	0.147	0.147	0.147		
AH	1.360	1.400		1.382	1.382	1.383	1.383		
AI	0.040	0.060		0.051	0.050	0.048	0.048		
AJ	1.190	1.230		1.221	1.220	1.221	1.222		
AK	0.010	0.020		0.010	0.010	0.010	0.010		
AL	0.053	0.073		0.063	0.063	0.063	0.063		
AM	0.240	0.260		0.250	0.250	0.250	0.248		
AN	2.518	2.538		2.518	2.518	2.518	2.518		
AO	84.39	90.39	DT8699	✓	✓	✓	✓		
AP	0.257	0.262	DT8683	✓	✓	✓	✓		
AQ	0.053	0.073		0.063	0.063	0.063	0.063		
AR									
AS									
Accept/Reject									

Measured by:	102
Date:	05.05.18

Audited by:	EP
Date:	05/05/18

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF RF	#

RELEASED
03.07.01

DART AEROSPACE LTD		Work Order: 23039
Description: Ø2.750 Support		Part Number: D2893-1
Inspection Dwg: D2893 Rev. A1		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2893 Rev A1/DSK078 Rev A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
Lathe Section									
A	2.707	2.712							
B	4.946	4.966							
C	3.064	3.084							
D	0.718	0.738							
E	0.090	0.110							
F	2.934	2.954							
G	2.166	2.186							
H	3.890	3.910							
I	0.914	0.934							
J	0.022	0.042							
K	0.109	0.129							
L									
HAAS Section									
AA	2.985	3.005		3.003	3.004	3.001			
AB	0.440	0.460		0.458	0.458	0.405			
AC	0.125	0.160		0.147	0.153	0.147			
AD	0.040	0.060		0.044	0.042	0.043			
AE	0.188	0.193	DT8706	✓	✓	✓			
AF	0.125	0.160		0.146	0.143	0.143			
AG	0.140	0.160		0.154	0.154	0.149			
AH	1.360	1.400		1.387	1.386	1.386			
AI	0.040	0.060		0.046	0.045	0.043			
AJ	1.190	1.230		1.227	1.226	1.223			
AK	0.010	0.020		0.016	0.016	0.015			
AL	0.053	0.073		0.063	0.063	0.063			
AM	0.240	0.260		0.250	0.250	0.250			
AN	2.518	2.538		2.528	2.528	2.528			
AO	84.39	90.39	DT8699						
AP	0.257	0.262	DT8683	✓	✓	✓			
AQ	0.053	0.073		0.063	0.063	0.063			
AR									
AS									
Accept/Reject									

Measured by: <i>Er</i>
Date: 05/05/19

Audited by: <i>ER</i>
Date: 05.06.07

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF <i>RF</i>	<i>#</i>

RELEASED
03.07.01

DART AEROSPACE LTD	Work Order: 23039
Description: Ø2.750 Support	Part Number: D2893-1
Inspection Dwg: D2893 Rev. A1	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2893 Rev A1/DSK078 Rev A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
Lathe Section									
A	2.707	2.712							
B	4.946	4.966							
C	3.064	3.084							
D	0.718	0.738							
E	0.090	0.110							
F	2.934	2.954							
G	2.166	2.186							
H	3.890	3.910							
I	0.914	0.934							
J	0.022	0.042							
K	0.109	0.129							
L									
HAAS Section									
AA	2.985	3.005		3.002	3.000	3.002	3.002		
AB	0.440	0.460		0.450	0.450	0.450	0.456		
AC	0.125	0.160		0.155	0.150	0.151	0.149		
AD	0.040	0.060		0.043	0.045	0.047	0.046		
AE	0.188	0.193	DT8706						
AF	0.125	0.160		0.142	0.140	0.145	0.147		
AG	0.140	0.160		0.151	0.154	0.151	0.152		
AH	1.360	1.400		1.381	1.384	1.385	1.382		
AI	0.040	0.060		0.047	0.043	0.043	0.045		
AJ	1.190	1.230		1.222	1.224	1.223	1.228		
AK	0.010	0.020		0.015	0.015	0.015	0.015		
AL	0.053	0.073		0.063	0.063	0.063	0.063		
AM	0.240	0.260		0.250	0.250	0.250	0.250		
AN	2.518	2.538		2.528	2.528	2.528	2.528		
AO	84.39	90.39	DT8699						
AP	0.257	0.262	DT8683						
AQ	0.053	0.073		0.063	0.063	0.063	0.063		
AR									
AS									
Accept/Reject									

Measured by:	Er
Date:	05/05/20

Audited by:	RE
Date:	05.06.09

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	RE

RELEASED
03.07.01

DART AEROSPACE LTD		Work Order:	
Description: Ø2.750 Support		Part Number:	D2893-1
Inspection Dwg: D2893 Rev. A1		Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2893 Rev A1/DSK078 Rev A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
Lathe Section									
A	2.707	2.712							
B	4.946	4.966							
C	3.064	3.084							
D	0.718	0.738							
E	0.090	0.110							
F	2.934	2.954							
G	2.166	2.186							
H	3.890	3.910							
I	0.914	0.934							
J	0.022	0.042							
K	0.109	0.129							
L									
HAAS Section									
AA	2.985	3.005		2.984	2.990	2.994	2.994		
AB	0.440	0.460		0.450	0.450	0.450	0.450		
AC	0.125	0.160		0.148	0.152	0.152	0.154		
AD	0.040	0.060		0.042	0.045	0.045	0.045		
AE	0.188	0.193	DT8706						
AF	0.125	0.160		0.151	0.149	0.150	0.148		
AG	0.140	0.160		0.154	0.153	0.152	0.153		
AH	1.360	1.400		1.385	1.380	1.381	1.382		
AI	0.040	0.060		0.051	0.042	0.040	0.045		
AJ	1.190	1.230		1.230	1.222	1.221	1.224		
AK	0.010	0.020		0.015	0.015	0.015	0.015		
AL	0.053	0.073		0.063	0.063	0.063	0.063		
AM	0.240	0.260		0.250	0.250	0.250	0.250		
AN	2.518	2.538		2.528	2.528	2.528	2.528		
AO	84.39	90.39	DT8699						
AP	0.257	0.262	DT8683						
AQ	0.053	0.073		0.063	0.063	0.063	0.063		
AR									
AS									
Accept/Reject									

Measured by:	EP
Date:	05/05/21

Audited by:	K
Date:	05.08.09

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	RF

RELEASED
03.07.01

Job Costing Report

Dart Aerospace Ltd.
Hawkesbury

Apr 12, 2005
02:25 pm

Work Order No : 0023039
Project Name : D2893-1
Project For : WK519
Work Order Type : Main
Main WO Number :
House Part Number : D2893-1
Description : Support
Manufactured : Yes
Amount Req'd : 10
Amount Done : 0
Start Date : 04-12-05
Est Finish Date : 05-05-05
Act Finish Date :
Drawings Req'd : No
Ok for Approval :
Approval Rec'd :

Department Code:
Burden Flags : NNNNNNNN
WO Status : Open
Invoice State : Not Invoiced
Invoice Date :
Invoice Number :
Invoice Amount : 0.00
Order Entry No :
OE Value : 0.00
Est Mark Up : 0.000%
Actual Mark Up : 0.000%
\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost :	0.00	0.00	0.00	0.00	0.00
Engineering Hours :	0.00	0.00	0.00		
Engineering Cost :	0.00	0.00	0.00	0.00	0.00
Production Hours :	0.00	0.00	0.00		
Production Cost :	0.00	0.00	0.00	0.00	0.00
Packaging Hours :	0.00	0.00	0.00		
Packaging Cost :	0.00	0.00	0.00	0.00	0.00
OverHead Hours :	0.00	0.00	0.00		
OverHead Cost :	0.00	0.00	0.00	0.00	0.00
CNC Hours :	0.00	0.00	0.00		
CNC :	0.00	0.00	0.00	0.00	0.00
Misc. Hours :	0.00	0.00	0.00		
Misc. :	0.00	0.00	0.00	0.00	0.00
Burden :	0.00	0.00	0.00		
Total Cost :	0.00	0.00	0.00		
Mark up :	0.000	0.000			
Selling Cost :	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done :	0.00	0.00
Profits/(Loss) :	0.00	0.00

**VALBRUNA**

SLATER STAINLESS, INC.

2400 Taylor Street West, P.O. Box 630
Fort Wayne, Indiana USA 46801
Phone: 260-434-2892 Fax: 260-434-2905**Product Certification Report**Report Number: **4059780**

Certified on Mar 23, 2005 Page 1 of 1

Order I.D. 0500071 001		Order Date 1/12/05		Commodity Code 408860-5	
Dim 1 4.0000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 239376	Customer I.D. 001155	Customer Purchase Order CB9038
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 630
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 400972	Weight	

Ship
ToCOPPER AND BRASS SALES
415 STATE PARKWAY
SCHAUMBURG, IL 60173Sold
ToVALBRUNA CORP.
31 IRON HORSE ROAD
OAKLAND, NJ 07436

Lifts: 0064

AISI 630

CONDITION A

ASTMA 564-02

ASMESA 564 01 ED 2002 ADD

AMS 2303E

AMS 5643Q

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.030	.54	.026	.022	.45	15.71	4.70	.33	3.39	.03	.29	.001	.29
HB												
354												

TENSILE PROPERTIES
CAPABILITY

HB	TS (PSI)	.2%YS (PSI)	%EL(2")	%RA	AGE(F)
444	208000	190000	14.3	48.8	900

MAGNETIC PARTICLE TEST

FREQ	SEV
AVG .00	.00

MACRO ASTM E340/E381

MACRO

OK

OK

OK

PERCENT FERRITE

% FERRITE

AVG .8

Free of mercury and low melting alloy contamination.

Maxx stainless.

Chemical testing performed to one or several of the following ASTM methods: E415, E572, E1019, E1085, E1086.

Material melted in Italy, manufactured in the United States.

Material conforms to listed specifications.

Quality system is compliant with ISO 9001:2000. Produced in accordance with EN 10204 3.1B.

DATE 4-14-5
 CUSTOMER C+B S Canada
 WORK ORDER # 1268056
 QUANTITY 182#
 THESE TESTS ARE FOR
 MATERIAL SHIPPED ON YOUR
 P.O. # 20078895 OF 51063
 FROM COPPER & BRASS SALES, INC.
 QUALITY REP. Rose Cabellano

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.

I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett
 Dennis Hackett

**VALBRUNA**

SLATER STAINLESS, INC.
2400 Taylor Street West, P.O. Box 630
Fort Wayne, Indiana USA 46801
Phone: 260-434-2892 Fax: 260-434-2905

Product Certification Report**Report Number: 4059780**

Certified on Mar 23, 2005 Page 1 of 1

Order I.D. 0500071 001		Order Date 1/12/05		Commodity Code 408860-5	
Dim 1 4.0000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 239376	Customer I.D. 001155	Customer Purchase Order CB9038
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 630
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 400972	Weight	

Ship To

COPPER AND BRASS SALES
415 STATE PARKWAY
SCHAUMBURG, IL 60173

Sold To

VALBRUNA CORP.
31 IRON HORSE ROAD
OAKLAND, NJ 07436

Lifts: 0064

AISI 630

CONDITION A

ASTMA 564-02

ASMESA 564 01 ED 2002 ADD

AMS 2303E

AMS 5643Q

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.030	.54	.026	.022	.45	15.71	4.70	.33	3.39	.03	.29	.001	.29

HB

354

**TENSILE PROPERTIES
CAPABILITY**

HB	TS (PSI)	.2%YS (PSI)	%EL(2")	%RA	AGE(F)
444	208000	190000	14.3	48.8	900

MAGNETIC PARTICLE TEST

FREQ SEV
AVG .00 .00

MACRO ASTM E340/E381

MACRO

OK

OK

OK

PERCENT FERRITE

% FERRITE

AVG .8

Free of mercury and low melting alloy contamination.

Maxx stainless.

Chemical testing performed to one or several of the following ASTM methods: E415, E572, E1019, E1085, E1086.

Material melted in Italy, manufactured in the United States.

Material conforms to listed specifications.

Quality system is compliant with ISO 9001:2000. Produced in accordance with EN 10204 3.1B.

DATE 4-14-05
CUSTOMER CBS Canada
WORK ORDER 1568056
QUANTITY 182 #
THESE TESTS ARE FOR
MATERIAL SHIPPED ON YOUR
P.O. # 20078893 OF 51063
FROM COPPER & BRASS SALES, INC.
QUALITY REP Rose Catalano

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.

I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett
Dennis Hackett

